

ASAP[®] 2425

ACCELERATED SURFACE AREA AND POROSIMETRY SYSTEM



micromeritics[®]

ERROR MESSAGES

Apr 2020

CORPORATE PROFILE

Micromeritics Instrument Corporation is a leading global provider of solutions for material characterization with best-in-class instrumentation and application expertise in five core areas: density; surface area and porosity; particle size and shape; powder characterization; and catalyst characterization and process development. Founded in 1962, the company is headquartered in Norcross, Georgia, USA and has more than 300 employees worldwide. With a fully integrated operation that extends from a world class scientific knowledge base through to in-house manufacture, Micromeritics delivers an extensive range of high-performance products for academic research and industrial problem-solving. The implementation of tactical partnerships to incubate and deliver valuable new technologies exemplifies the company's holistic, customer-centric approach which extends to a cost-efficient contract testing laboratory – the Particle Testing Authority (PTA). The strategic acquisitions of Freeman Technology Ltd and Process Integral Development S.L. (PID Eng & Tech) reflect an ongoing commitment to optimized, integrated solutions in the industrially vital areas of powders and catalysis.

Freeman Technology (Tewkesbury, UK) brings market-leading powder characterization technology to Micromeritics' existing portfolio of particle characterization techniques. The result is a suite of products that directly supports efforts to understand and engineer particle properties to meet powder performance targets. With over 15 years of experience in powder testing, Freeman Technology specializes in systems for measuring the flow properties of powders. In combination with detailed application know-how these systems deliver unrivalled insight into powder behavior supporting development, formulation, scale-up, processing and manufacture across a wide range of industrial sectors.

PID Eng & Tech (Madrid, Spain) complements Micromeritics' renowned offering for catalyst characterization with technology for the measurement and optimization of catalytic activity, with a product range that extends to both standard and bespoke pilot scale equipment. Launched in 2003, PID Eng & Tech is a leading provider of automated, modular microreactor systems for the detailed investigation of reaction kinetics and yield. These products are supported by a highly skilled multidisciplinary team of engineers with in-depth expertise in the design, construction and operation of laboratory units and process scale-up.

The Particle Testing Authority (PTA) provides material characterization services for fine powders and solid materials using Micromeritics' instrumentation alongside complementary solutions from other vendors. With the certification and expertise to operate across a wide range of industries the PTA offering runs from single sample analysis to complex method development, method validation, new product assessment, and the analytical support required for large scale manufacturing projects. An experienced, highly trained team of scientists, engineers, and lab technicians works closely with every client to ensure that all analytical requirements are rapidly and responsively addressed.

Micromeritics has a strong global network with offices across the Americas, Asia, and Europe complemented by a dedicated team of distributors in additional locations. This ensures that local, knowledgeable support is available for every customer, in academia or industry. Micromeritics works across a truly diverse range of industries from oil processing, petrochemicals and catalysts, to food and pharmaceuticals, and at the forefront of characterization technology for next generation materials such as graphene, metal-organic-frameworks, nanocatalysts, and zeolites. Engineering solutions that work optimally for every user is a defining characteristic of the company.

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ERROR MESSAGES

If the *Action* response indicates to contact a Micromeritics service representative, record the error message, then make backup copies of any files involved in the operation.

2401 FATAL ERROR.

Cause: An internal processing and/or hardware error has occurred during communication with the analyzer.

Action: Contact your Micromeritics Service Representative.

2430 Error accessing file [n], error code = [n].

Cause A: Media may be damaged.

Action A: Clean the media drive. If this does not eliminate the problem, attempt operation using a backup copy of the file.

Cause B: Hard disk may be damaged.

Action B: Contact your Micromeritics Service Representative.

Cause C: An application error occurred when the file was accessed.

Action C: Contact your Micromeritics Service Representative.

Cause D: The file name specified contains one or more invalid characters.

Action D: Enter a valid file name. Do not use characters such as * or ?. Refer to the operating system manual.

2431 Error writing file [n], error code = [n].

Cause A: User logged onto a computer that does not have Write permissions.

Action A: Contact your IT department to change user permissions.

Cause B: Insufficient hard disk space to perform the operation.

Action B: Copy files not used regularly to an external media. Delete them from the hard disk, and then try the operation again.

2432 Invalid response from MMI 'FILE_READ' request.

Cause: An internal processing and/or hardware error has occurred.

Action: Contact a Micromeritics service representative if this error message continues.

2433 New entries have been found in this directory. Refresh the directory inform-

ation?

Cause: Several analyzer files have been added to this directory by some function other than the analysis application.

Action: Click **Yes** to update the directory information with data from each new file. This operation may take a minute. Click **No** to locate the file manually. This option may be feasible if a large number of files have been copied into the directory and the file name is known.

2434 File [n] — Subset [n] wrote wrong [n] of data, expected [n] bytes.

Cause: An internal processing and/or hardware error has occurred.

Action: Contact your Micromeritics Service Representative.

2438 Cannot open scheduling diagnostic data save file: [n].

Cause: The file necessary for **Unit [n] > Diagnostics > Schedule Diagnostic Test** (...Hardware\scheddiagtests.dat) could not be read. It is likely corrupted.

Action: Exit the application. Delete or rename the file mentioned in the error message and restart the application. A new file will be created. Also ensure that the hardware directory is not write-protected.

2438 Disk drive [n] is inaccessible.**2439 Could not register file.****2440 Subset not found.****2441 Seek within file failed.****2442 Bad header in subset file.****2443 Subset owner denied access.****2444 Not a valid file format.****2445 Subset wrote the wrong amount of data.****2446 Error reading data.****2447 Error writing data.**

Cause: An unexpected error occurred when trying to access a data file.

Action: Contact your Micromeritics Service Representative.

2448 File directory [n] is invalid. Resetting to the installation directory.

Cause: A working directory specified in the .INI file is invalid, has been moved or deleted.

Action: The installation directory will be substituted. The next time a file is opened, use the directories list to move to the correct directory.

2449 This field does not contain a valid file specification.

Cause: An invalid file name was entered.

Action: See the description of file naming conventions in a Windows manual, then re-enter the name.

2450 Sample Defaults may not be edited while this operation is in progress. Do you wish to save and close the Sample Defaults edit session?

Cause: An automatic analysis (an analysis in which sample files are created using the defaults) was processing while editing the defaults.

Action: Finish the edit session of the defaults, close the window, then restart the automatic analysis.

2458 An instrument is performing a critical operation. Wait a few moments before exiting the application.

Cause: An attempt was made to exit the application while the analyzer was performing a critical operation. This operation must be completed before the application can be exited.

Action: Wait a short time and attempt to exit the application again.

2459 An instrument is busy. A delay in restarting this application could result in loss of new data. Continue with program Exit?

Cause: An attempt was made to exit the application while an analysis was in progress. While this is possible, the data collected when the application is inactive will not be permanently recorded until the application is restarted. A power failure to the analyzer could cause some data to be lost. Continued data collection may also exhaust the memory of the controller.

Action: If not concerned with the potential for loss of data should a power failure occur, click **Yes** to continue; otherwise, click **No**.

2460 Fatal Communications error on [n].

Cause: There was a fatal error in communication between the application and the software in the analyzer. All displays for that analyzer will be closed.

Action: Ensure that the analyzer is connected to the computer on the communications port

configured in the Setup program. Stop and restart the analyzer application. Contact your Micromeritics Service Representative.

2461 No instruments are in operation. This application will unconditionally terminate.

Cause: At least one analyzer must be active for the application to operate. The initialization of all analyzers configured with the Setup program has failed. The application stops.

Action A: Usually this message is preceded by another message giving the reason for the analyzer's failure to initialize. Refer to the instructions for that message.

Action B: Ensure that the analyzer is attached to the computer on the communications port configured with the Setup program. Verify that the analyzers power switch is in the ON position and that the light on the front panel is illuminated. Contact a Micromeritics service representative if this error message continues.

2471 [n] has an invalid communications port specified. It cannot be initialized.

Cause: The communications port specified for this analyzer during installation (or configuration) is invalid.

Action: Use the Setup program to change the analyzer configuration.

2474 [n] communications port [n] specified in the program control files is already in use. Unit cannot initialize.

Cause: The communications port assigned to the indicated unit is in use by another program.

Action: End the program using the busy port or use the Setup program to change the communications port assigned to this program.

2475 [n] communications port [n] specified in the program control files cannot be accessed. Unit cannot initialize.

Cause: The operating system has prevented the application from accessing the communications port.

Action: Review the hardware configuration of the computer. Ensure no other application is using the port. Contact a Micromeritics service representative if this error message continues.

2476 [n] startup failed. Cannot initialize the communications port.

Cause: The communications port specified during installation is invalid.

Action: Use the Setup program to change the analyzer configuration. Contact a Micromeritics service representative if this error message continues.

2477 [n] did not properly initialize.

Cause: The application was unable to initialize this analyzer. This is usually caused by one of the conditions listed in the previous error messages.

Action A: Run the Setup program and ensure that a valid port is specified; if not, specify a valid one when prompted.

Action B: Reinstall the application, then restart the application.

Action C: Contact a Micromeritics service representative if this error message continues.

2478 Error copying sequential data segment.

Cause: An internal processing and/or hardware error occurred while accessing a portion of a sample file.

Action: Confirm that the media being accessed does not contain errors. Contact your Micromeritics Service Representative.

2479 Cannot open [n] because it is a [n] file.

Cause: The file cannot be opened because it came from a different Micromeritics application

Action: Select a different file.

2480 File [n] cannot be analyzed. It is currently being edited.

Cause: An attempt was made to start an analysis using a file that is open for editing.

Action: Finish editing the file, save and close it, then start the analysis.

2481 Error accessing the sample information file [n].

Cause A: An unexplained error prevented access to this file.

Action A: The hard disk drive may be corrupt. Run diagnostics.

Cause B: An attempt was made open a file that is already open, possibly minimized.

Action B: View the minimized icons, locate and maximize the file.

Cause C: A computer or network problem occurred.

Action C: Check the performance of the computer devices or network.

2482 File cannot be opened for writing.

Cause: An attempt was made to open a file currently being used.

Action: Locate the application using the file. In the Micromeritics application, use the Window

menu item for a list of all open windows.

2483 An analysis cannot be performed on [n]. It is open for editing and contains errors.

Cause: An attempt was made to use a sample file containing errors that is currently open.

Action: Go to the window containing the file, correct the errors, then save it.

2484 The edit session for [n] must be saved before the analysis. Save changes and continue with the analysis?

Cause: An attempt was made to start an analysis using a file that contains unsaved changes and is open for editing.

Action: Click **Yes** to save the changes, then proceed with the analysis. Click **No** to cancel the analysis, then continue editing the sample file.

2485 The service test file has an invalid status and cannot be used for this analysis.

Cause: The selected file has a status other than No Analysis.

Action: Select a file, or create a new one and click **Replace All** to copy parameters from the file originally selected.

2486 Could not construct [n] report type. Program will terminate.

2487 Could not start report generator. Error code [n]. Program will terminate.

Cause A: Full rights to the application folders and files is required.

Action A: Contact a system administrator to have full rights granted.

Cause B: An internal processing and/or hardware error has occurred.

Action B: Contact your Micromeritics Service Representative.

2488 File [n] cannot be opened for editing.

Cause: The specified file is open for editing.

Action: Check the Window menu item to locate the other edit session.

2489 File [n] cannot be opened for writing.

Cause: The specified file in a Save As operation is open.

Action: Select a different file for the Save As operation.

2490 No '.INI' file present. Application will terminate.

Cause: The ASCII .INI file containing initialization information and system options information used during program startup does not exist.

Action: Restore the .INI file from back-up or re-install the application.

2491 Highlighted fields contain errors. Please correct the errors before closing.

Cause: The fields highlighted in red contain invalid entries. The window cannot be closed until all errors are corrected.

Action: Check the entries, correct the errors, then close the window.

2492 This field's entry is invalid.**2493 An entry is required for this field.**

Cause: The highlighted field contains an invalid entry.

Action: Check the entry and correct the error.

2494 Value is out of the valid range.**2495 Enter a value between [n] and [n].**

Cause: The entered value in the highlighted field is outside the valid range of values.

Action: Check the entry, then either enter or select an appropriate value. The valid range is shown in the information bar.

2496 Invalid number.**2497 This field contains an invalid character.**

Cause: An invalid number (or character) was entered in the highlighted field.

Action: Check the entry, then either enter or select a valid number (or character).

2498 The requested change to the Sample's status is invalid at this time.

Cause: A request to change the file status, for example, from automatically collected to manually entered could not be done.

Action: Contact your Micromeritics Service Representative. Record the name of the same file in which the problem occurred.

2499 Sequence number must contain at least 3 digits.

Cause: An attempt was made to enter a sequence number that did not contain at least three digits.

Action: Enter a sequence number that contains at least three digits.

2500 All sample file names that can be created using the sequence number pattern already exist. You may want to modify the next sequence number.

Cause: No more sample files can be created using the currently entered file name sequence number.

Action: Go to **Options > Default Method**, then enter another sequence number.

2501 System resources have reached a dangerously low level. Please close some windows to avoid the loss of data.

Cause: A large number of windows are open and consuming the system resources.

Action: Close one or more windows. Contact a Micromeritics service representative if this error message continues.

2505 Error logger cannot be initialized. Error code [n]. Program will exit.

Cause: An internal processing and/or hardware error has occurred.

Action: Contact your Micromeritics Service Representative.

2506 Sample file [n] has a No Analysis status and cannot be used for this operation.

Cause: The selected sample file does not have collected data and cannot be used for operations, for example, reporting.

Action: Enter the name of a file with a status of *Complete*, *Analyzing*, or *Entered*. Alternatively, select a sample file from the list box.

2508 The selected file [n] does not contain a valid script.

Cause: The selected service test file does not contain any steps or the file has become corrupted.

Action: If the service test file has no steps, open the service test file and add steps to the file using the *Service Test Script* tab.

2513 Unable to read the calibration file [n].

Cause: An invalid calibration file was selected or cannot be read.

Action: Ensure the media containing the calibration file has no problems.

2514 Unable to write the calibration file [n].

Cause: An attempt to save calibration data has failed due to possible media problems.

Action: Ensure the destination location has no problems or select an alternate media to save the calibration data.

2515 Warning: Changing the calibration information will affect the performance of the instrument. Only qualified service personnel should do this. Do you wish to proceed?

Cause: The process of performing a calibration operation was started.

Action: Calibration operations should only be done by or under the direction of qualified service personnel.

2516 Warning: Keeping a backup copy of the calibration data is recommended by Micromeritics. Would you like to do so now?

Cause: A calibration operation was performed and a backup copy is recommended.

Action: Save the calibration data to a file.

2517 Canceling this dialog will reset the calibration state to what it was when this dialog was first opened. Are you sure you want to cancel?

Cause: The calibration has not been accepted upon the completion of the calibration operation.

Action: If the calibration operation was successful, click **Accept**.

2520 No data points available for reporting.

Cause: The selected sample file does not have collected data and cannot be used for reporting.

Action: Select a different sample file.

2521 Unable to program controller.

Cause: A hardware malfunction has occurred.

Action: Contact your Micromeritics Service Representative.

2522 Invalid controller application file.

Cause: The application's control file has been corrupted or deleted.

Action: Reinstall the analysis program.

2523 Programming controller failed.**2524 CRC check failed on programming controller.****2525 Unknown error programming controller.****2526 Controller download was not successful.****2527 Controller CRC error on boot block.****2528 Controller DRAM error.****2529 Controller Com 1: error.****2530 Controller Com 2: error.****2531 Controller debug port error.**

Cause: An internal processing and/or hardware error has occurred.

Action: Contact a Micromeritics service representative if this error message continues.

2532 The instrument contains a different software version. Do you want to reset it?

Cause: The application has discovered a different version of application operating in the analyzer.

Action: If there are no analyzers other than the one connected to the computer, click **Yes**, then allow the updated application to load.

2533 Analyzer initialization failed.

Cause: An internal processing and/or hardware error has occurred.

Action: Contact your Micromeritics Service Representative.

2542 The file [n] could not be written. Check that the directory permissions are correct.

Cause: The person logged into the computer does not have write access to the program and/or data directory.

Action: Contact your system administrator set up proper privileges for all users

2548 System status [n].

Cause: There was a problem establishing communication with the analyzer.

Action: Ensure that the communications cable is seated firmly in the Ethernet slot at the analyzer connection and the computer connection. Contact your Micromeritics Service Representative.

2549 Error accessing online manual file [n].

Cause: The operator manual file could not be located.

Action A: Reinstall the application.

Action B: Copy the contents of the manual folder from the setup media to the application directory.

2550 Attempts to acquire the instrument's status timed out.

Cause: There was a problem establishing communication with the analyzer.

Action: Ensure that the communications cable is seated firmly in the Ethernet slot at the analyzer connection and the computer connection. Contact your Micromeritics Service Representative.

2551 Cannot access web page [n].

Cause: The Micromeritics web page for DFT models cannot be accessed. This could be caused by an ISP problem of high internet traffic.

Action: Try the operation later.

2552 Configured serial number does not match instrument.

Cause: An analyzer was substituted without properly changing the analyzer serial number.

Action: Use the installation program to add or move devices as necessary.

2554 File [n] does not contain any report data.

Cause: The selected sample file has no reports selected for printing.

Action: Edit the sample file and select reports to print in *Report Options*.

2557 Directory [n] does not exist.

Cause: The directory entered in a file selector is not valid.

Action: Enter a valid directory.

- 2558** **The instrument is busy. The requested operation cannot be executed.**
Cause: The analyzer is analyzing and cannot be interrupted.
Action: Try the operation later.
- 2559** **SPC directory [n] does not exist.**
Cause: A directory in one or more of the files selected in a SPC Report is invalid.
Action: Click **Samples** in the SPC report and verify the locations of all sample files.
- 2560** **File [n] cannot be created or opened. It has an unrecognized extension.**
- 2560** **File [n] cannot be created. It has an unrecognized extension.**
Cause: The extension specified in the file you are trying to create is not one which is recognized by the application.
Action: Change the extension of the file in the file name field of the file selector.
- 2563** **Cannot write. File or directory [n] read only.**
Cause: The specified file name is marked as read-only
Action: Select a different file name.
- 2572** **File [n] already selected for the analysis.**
Cause: The file selected for analysis on one port has already been specified for another port.
Action: Select a different sample file for each port.
- 2576** **The instrument [n] is not calibrated.**
Cause: The analyzer application is in the process of initializing the analyzer and is unable to locate the calibration files.
Action A: Click **OK**. Go to **Unit [n] > Calibration > Load from File**, then select a file containing calibration data.
Action B: Click **OK**. Close the application, then use the Setup program to reinstall calibration files.
- 2585** **Please re-install to make use of Windows libraries for file management. The following libraries are missing: [n]**
Cause: This message is triggered on application start up if any of the library files used by an application do not exist on disk.

Action: Add the library into the libraries folder.

2586 Sample file [n] has no pressure table entries.

Cause: Trying to analyze a sample file with no pressure entries in *Analysis Conditions*.

Action: Either edit the *Analysis Conditions* and enter the pressure points to be used for analysis, or select a sample file that already has the pressure points entered.

2587 Sample file [n] has no dose incremental table entries.

Cause: An attempt was made to start an analysis with an empty dose increment table.

Action: Add dose increment entries to the dose increment table in the analysis conditions.

2592 The selected file has an extension that is not supported by this operation.

Cause: The selected file does not have a supported file extension.

Action: Open the adsorptive properties file. Open the .FPI file selector and select another file with a supported file extension.

4002 Thermal Transpiration correction had no effect.

Cause: The *Thermal transpiration correction* option was selected on the *Report Options* window; however, the correction did not change any pressure by more than one percent.

Action: Deselect this option to disable this message. This correction is only meaningful for very low pressures

4003 Error obtaining relative pressures. Check Po setting.

4004 Error computing quantity adsorbed.

Cause: An internal processing and/or hardware error occurred during report generation.

Action: Contact your Micromeritics Service Representative.

4005 Pressures were not smoothed. Not enough pressures below 0.10 [n].

Cause: The *Smooth pressures below 0.10 P/P₀* option was selected on the *Report Options* window. There must be at least 10 pressures within this range for smoothing to occur.

Action: Deselect this option to disable this message.

4011 Analysis gas in sample file does not match analysis gas in unit.

Cause: An attempt was made to start an analysis using a sample file in which the analysis gas specified does not match the analysis gas entered in the *Unit Configuration* window.

Action A: If the wrong adsorptive was selected in the sample file, change the adsorptive in the file.

Action B: If necessary, attach the appropriate gas cylinder, then enter the gas in *Unit Configuration*.

4012 Psat gas in sample file does not match any gas in the unit.

Cause: If using *Measure psat of a gas* in *P_o* and *T* options in *Analysis Conditions*, the selected gas is not one of the selected gases in *Unit Configuration*.

Action A: If the incorrect psat was selected, change the psat gas.

Action B: If the gas was recently connected to the analyzer, update the *Unit Configuration*.

4014 File [n] is not a valid file for conversion.

Cause: The file selected for conversion is not a valid file.

Action: Select only files that have been created by the proper program.

4015 Error creating export file for sample [n].

Cause: A file error occurred during creation of an export output file.

Action: The output file name may be invalid. Ensure that the target directory exists and is not full or write protected. The target disk drive may be damaged or inoperative. Verify that other files may be created on the same drive. Contact your Micromeritics Service Representative.

4016 Sample [n] has no data for export.

Cause: The file selected for export has a status of No Analysis. No export file will be created.

Action: Select a file which contains analysis data.

4017 Damage to the instrument will result if the sample [n] has not been manually evacuated. Have you evacuated the sample?

4020 Disabling this option may damage the instrument. Are you sure that the sample should not be backfilled?

Cause: Backfill sample at start of analysis was not selected on the Sample Backfill Options window. The sample tube is normally at atmospheric pressure when an analysis is started; it must be backfilled before the analysis begins to prevent sample material

from being drawn into the manifold.

Action: To manually evacuate the sample prior to the start of the analysis, click **Yes**. Otherwise, click **No**, go to the Sample Backfill Options window, then select Backfill sample at start of analysis.

4021 The entered [n] value ([n] and Temperature Option of the Analysis Conditions is outside the range of the pressures listed in the Psat vs Temperature Table (Adsorptive Properties).

Cause: The entered P_0 value is not within the range of pressures selected for analysis.

Action A: Enter a new P_0 value.

Action B: Add more pressures and corresponding temperatures to the *Analysis Conditions* pressure table to include the presently selected P_0 value.

4022 The entered bath temperature value ([n] and Temperature Options of the Analysis Conditions) is outside the range of the temperatures listed in the Psat vs Temperature Table (Adsorptive Properties).

Cause: The entered bath temperature is outside of the range of temperatures specified in the *Adsorptive Properties*.

Action A: Change the entered temperature.

Action B: Change the adsorptive.

Action C: Add more temperatures and corresponding pressures to *Adsorptive Properties*.

4023 The file [n] cannot be prepared for analysis. It is open for editing and contains errors.

Cause: An attempt was made to start an analysis using a file that contains errors and is open for editing.

Action: Finish editing this file, save and close it, then start the analysis.

4024 Backfill gas in sample file does not match any gas in the unit.

Cause: The backfill gas specified in the sample file does not match the analysis gas entered in the *Unit Configuration*.

Action A: If the wrong backfill gas was selected in the sample file, change the backfill gas in the file.

Action B: If necessary, attach the appropriate gas cylinder, then enter the gas in the *Unit Configuration*.

4025 There is no [n] attached to the unit.

Cause: The gas shown in the error message is specified in *Analysis Conditions* but is not connected to the unit.

Action: Go to **Unit [n] > Unit Configuration**, then enter the gas.

4026 Cannot calculate Dubinin-Astkhov: bad least squares data.

Cause: Less than two selected data points are within the fitted pressure range.

Action: Edit the selection of data points on the Dubinin interactive editor or on the Dubinin Pressures window.

4027 Fewer than two sample files have data suitable for heat of adsorption reports.

Cause: Less than two of the selected sample files for heat of adsorption reports contain appropriate data.

Action: Edit the Quantity Adsorbed table, or select other sample files.

4028 Dubinin calculations cannot be performed because the affinity coefficient of the analysis gas is zero.

Cause: Dubinin values could not be calculated because the affinity coefficient of the analysis gas is zero.

Action: Access the *Dubinin Report Adsorptive* options in the sample file, then enter an appropriate value for the analysis gas.

4029 At least two fitted data points are needed for Alpha-S calculations.

Cause: Fewer than two data points fall within the selected Alpha-s range.

Action: Edit either the calculation pressure in the fitted Alpha-s range, or use a different reference curve.

4030 Preparations failed in primary data.

Cause: Appropriate data were not available to generate the report.

Action: This message was preceded by a different error message. Refer to the cause/action of the preceding message.

4031 Not enough points with a relative pressure in the range [n].

Cause: Fewer than two data points selected for the Dubinin report fall within the selected rel-

ative pressure range.

Action: Edit the calculation pressure range or the fitted relative pressure range.

4033 Not enough points to generate Dubinin Tabular Report.

Cause: There are fewer than two valid data points available for the Dubinin tabular reports.

Action: At least two micropore pressures must be selected for inclusion in the Dubinin report. Edit the selection of data points on the Dubinin interactive editor or on the Dubinin Pressures window.

4034 Fewer than 2 points available for Dubinin calculations.

Cause: There are fewer than two valid data points available for Dubinin reports in one of the sample files selected for overlaying.

Action: At least two micropore pressures must be selected for inclusion in the Dubinin report. Edit the selection of data points on the Dubinin interactive editor or on the Dubinin Pressures window.

4035 Cannot calculate optimized Astakhov exponent.

Cause: There are fewer than two valid data points in the relative pressure range specified. Astakhov reports will not be produced.

Action: At least two pressures must be selected for inclusion in the Astakhov report. Edit the selection of data points on the Astakhov interactive editor or on the Astakhov Pressures window.

4036 Fewer than 2 points available for Horvath-Kawazoe calculations.

Cause: At least two data points must be selected for inclusion in the Horvath-Kawazoe analysis. No report will be produced.

Action: Edit the selection of points on the Horvath-Kawazoe interactive editor or on the Horvath-Kawazoe window.

4037 Computations failed while processing the primary data set. No reports will be produced.

Cause: The preparation of data for reporting could not be successfully completed. No Horvath-Kawazoe reports will be produced. This message will always be preceded with another one containing additional information.

Action: Refer to the error message number which preceded this one for an explanation.

4038 Fewer than 2 points available for the Langmuir Qm computation.

Cause: The *Cheng/Yang correction* to the Horvath-Kawazoe equation requires the value of the monolayer volume as calculated from the Langmuir equation. The isotherm must include at least two points above 0.02 relative pressure for the Langmuir equation to be applied.

Action: The analysis will be performed without the Cheng/Yang correction. Deselect *Apply Cheng/Yang correction* on the *Horvath-Kawazoe Report Options* window to prevent this message from appearing on future reports.

4039 The isotherm does not meet the constraints of the Cheng/Yang assumption.

Cause: The *Cheng/Yang correction* to the Horvath-Kawazoe equation requires the value of the monolayer volume as calculated from the Langmuir equation. The isotherm does not correlate to the Langmuir assumption with a coefficient of 0.98 or more. The correction is not applicable to this isotherm or to the range of the data points selected.

Action A: The analysis will be performed without the *Cheng/Yang correction*. Deselect *Apply Cheng/Yang correction* on the *Horvath-Kawazoe Report Options* window to prevent this message from appearing on future reports.

Action B: Generate the Langmuir report for the same data points selected for the Horvath-Kawazoe report. If the Langmuir correlation coefficient can be brought above 0.98 by removing some points at high relative pressure, remove them, then reproduce the Horvath-Kawazoe reports.

4040 The value of Qm computed from the Langmuir equation is too low.

Cause: The *Cheng/Yang correction* to the Horvath-Kawazoe equation requires the value of the monolayer volume as calculated from the Langmuir equation. The computed value is less than the volume adsorbed at the largest relative pressure included in the analysis. The correction is not applicable to this isotherm or to the range of the data points selected.

Action: The analysis will be performed and the *Cheng/Yang correction* will be applied to all points with a volume adsorbed less than the value of V_m . The pore size will not be calculated for data points with an invalid volume adsorbed. Deselect *Apply Cheng/Yang correction* on the *Horvath-Kawazoe Report Options* window to clear this message.

4041 Cheng/Yang correction is inappropriate for some [n].

Cause: The Cheng/Yang correction is usually inappropriate for any P/P_0 above the isotherm knee. In some instances, the computed pore sizes may decrease above the knee. While it is possible to include these relative pressures (usually above 0.1 P/P_0) in the analysis, the computed pore sizes for these pressures are usually meaningless.

Action: Change the data points selected for the Horvath-Kawazoe report to include only relative pressures at or below the knee of the isotherm, or change the Horvath-Kawazoe report options so that the Cheng/Yang correction is not applied.

4042 **0.0 cannot be a starting or ending pressure for a geometric progression from low pressure.**

4043 **1.0 cannot be a starting or ending pressure for a geometric progression toward saturation.**

Cause: An attempt was made to generate a pressure table from a geometrically progressing range.

Action: Change the specified entered value.

4044 **Points in the Langmuir report pressure table lie outside the collected data.**

4045 **Points in the report pressure table lie outside the collected data.**

Cause: Calculation pressure range is not being used. More than one of the report pressure table points is above the range of the collected data and more than one is below.

Action: Change the report pressure table to be more consistent with the collected data.

4046 **[n] could not be opened for reading.**

Cause: A thickness curve file could not be opened.

Action: If the problem persists, restart the computer, then optionally perform a media integrity check.

4047 **Warning: An error occurred while reading [n].**

Cause: An error happened during a read operation of a thickness curve file.

Action: If the problem persists, restart the computer, then optionally perform a media integrity check.

4050 **None of the requested quantities adsorbed is within the range of the collected data of more than one sample file.**

Cause: The Heat of Adsorption report failed because the specified quantities are not within the range of the collected data.

Action: Edit the quantities adsorbed so that they are within the range of the collected data, or select other sample files.

4051 **The sample [n] does not have any data in the range of the requested quantities adsorbed.**

Cause: The sample data cannot be interpolated to any of the quantities adsorbed.

Action: Edit the quantities adsorbed so that they are within the range of the collected data.

4052 **Fewer than two points are selected for this report.**

4052 **Fewer than three points provided to the interpolation table.**

4052 **Fewer than three points are selected for this report.**

Cause: At least two (or three) points are required for the BET calculations.

Action: Edit the calculation range in the BET report.

4053 **At least two data points must be selected for t-Plot calculations.**

Cause: At least two points are required for the t-Plot calculations.

Action: Edit the calculation range for the t-Plot report.

4054 **Fewer than two data points are inside the fitted thickness range.**

Cause: At least two points must be within the fitted thickness range for the t-Plot calculations.

Action A: Edit the calculation range for the t-Plot report.

Action B: Edit the fitted thickness range in the t-Plot report editor.

4055 **A positive BET surface area was not calculated. Please check your BET Report.**

4056 **A positive Langmuir surface area was not calculated. Please check your Langmuir report.**

Cause: Fewer than two points were assigned to the requested surface area calculation in the collected data table.

Action A: Assign more points to the surface area calculation.

Action B: Select a different surface area in the t-Plot report editor.

4057 **At least two data points are needed for Freundlich calculations.**

4058 **At least two data points are needed for Temkin calculations.**

Cause: Less than two data points have been selected for the specified report; at least two are required.

Action: Edit the selection of points on the report's interactive editor or on the Pressures win-

dow for the specified report.

4059 Fewer than 2 points available for MP-Method calculations.

Cause: At least two points are required for the MP-Method calculations.

Action: Edit the calculation range for the MP-Method report.

4060 Sample [n] contains no data points.

Cause: An attempt was made to save a sample without collected data as a t-curve or alpha-S curve.

Action: Repeat the Save As t-curve or Save As alpha-S operation after opening a sample that has collected data.

4061 The t-curve must contain at least 2 points.

Cause: At least two points are required in a thickness curve definition.

Action: Edit the thickness curve.

4062 Error during report preparation.

Cause: An internal processing error has occurred.

Action: Contact your Micromeritics Service Representative.

4063 No subreports selected.

Cause: A report (e.g. BJH) comprised of several reports has no subreport selected.

Action: Edit the report in Report Options and select at least one subreport.

4067 No data points are within the range of pressures in the reference isotherm.

Cause: There are no collected data points within the range of pressures in the reference isotherm.

Action: Select data points in the range of the reference isotherm, or select a more appropriate reference isotherm.

4068 No points were selected for the f-Ratio report.

Cause: The *f-Ratio*-report does not have any points selected.

Action: Edit the selection of data points on the f-Ratio window.

- 4069 Dosing method choice is invalid - the Analysis Conditions choice of Absolute pressure dosing requires that the Adsorptive Properties Dosing Method is set to Normal.**
- Cause:* There is an incompatibility between the analysis conditions choice of *Absolute pressure dosing* and the *adsorptive properties dosing* method.
- Action:* Edit one of the choices.
- 4070 Unable to load deconvolution model [n].**
- Cause:* The list of available models was corrupted; therefore, the model selected could not be loaded for the deconvolution.
- Action:* Exit the application. Reinstall the application, then try again.
- 4071 The selected pressures points do not form a valid set for deconvolution.**
- Cause:* The data points selected for analysis do not contain enough information to allow a DFT data reduction.
- Action:* At least two points with strictly increasing pressures and volumes adsorbed are required for a DFT Plus data reduction. Edit the selection of data points on the DFT interactive editor or on the DFT Pressures window.
- 4072 The range of pressures selected is too small to deconvolute using this model.**
- Cause:* A null result was found using the selected model.
- Action:* At least two points with strictly increasing pressures and volumes adsorbed are required for a DFT Plus data reduction. Edit the selection of data points on the DFT interactive editor or on the DFT Pressures window.
- 4073 The analysis gas [n] does not match the model gas [n].**
- Cause:* The model assumes a specific gas, and the sample file uses a different one.
- Action:* Select a model that assumes the same gas.
- 4074 The analysis temperature [n] does not match the model temperature [n].**
- Cause:* The temperature for the selected model did not match the analysis temperature.
- Action:* Select a different model.
- 4075 The models cannot be located in the models folder. Reinstall the software.**

Cause: The models could not be located. They may have been inadvertently deleted or moved.

Action: Reinstall the application.

4076 Invalid sample file - Adsorptive Properties Non-condensing adsorptive cannot be used unless Analysis Conditions Absolute pressure dosing is selected.

Cause: Non-condensing adsorptive is selected in *Analysis Conditions / Adsorptive Properties* and the *Absolute pressure dosing* check box is not selected in *Analysis Conditions*.

Action: If *Absolute pressure dosing* is needed, select *Absolute pressure dosing* on the *Analysis Conditions* window. Otherwise, edit the *Analysis Conditions / Adsorptive Properties* and deselect *Non-condensing adsorptive*.

4077 Cannot get surface area for [n].

Cause: The Isotherm report for the named overlay file has *Per gram* selected for the *Volume Adsorbed*, and the Isotherm report for the primary file has a surface area option selected for the *Volume Adsorbed*.

Action A: Edit the Isotherm report for the named overlay file, then select a surface area option for *Volume Adsorbed*.

Action B: Click **Overlays** on the *Report Options* window of the primary file, then remove the named overlay file from the list.

4078 Slope and Y-Intercept cannot be determined from the selected points.

Cause: The Langmuir report cannot be generated from the selected points.

Action: Edit the calculation pressure range in the Langmuir report pressure window.

4080 The compressibility factor table has [n] pressure entries. Only [n] are allowed.

Cause: The fluid property information file has too many rows of compressibility information.

Action: Delete rows for pressures that are not likely to be encountered in the analysis.

4127 The compressibility factor table has [n] temperature entries. Only [n] are allowed.

Cause: The fluid property information file has too many columns of compressibility information.

Action: Delete columns for temperatures that are not likely to be encountered in the analysis.

4135 HOA file [n] does not exist.

Cause: The sample file in the Heat of Adsorption report list does not exist.

Action: Go to **Report > Heat of Adsorption**. Click **Add Samples**, then select the sample file.

4136 HOA file [n] is corrupt.

Cause: The sample file in the Heat of Adsorption report list is corrupt.

Action: Go to **Report > Heat of Adsorption**. Select the corrupt sample file, then click **Remove Sample**. Rerun the Heat of Adsorption report.

6100 Unable to establish the TCP connection with the instrument.

Cause A: A communications problem between the computer and the analyzer has occurred.

Action A: Check the cable connection between the computer and the analyzer.

Action B: Go to **Unit [n] > Unit Configuration** and verify that the TCP/IP configuration for the computer and the analyzer are correct.

Action C: Exit the application and power off the analyzer, then power on the analyzer and restart the application. If the problem persists, contact your Micromeritics representative.

6102 The instrument [n] is not calibrated.

Cause: One or more calibration operations have not been performed.

Action: If using the setup media, reinstall the calibration files. If this does not correct the problem, contact your Micromeritics representative.

6204 The sample has an invalid status and cannot be used for degassing.

Cause: An attempt was made to degas a sample that has a status other than No Analysis.

Action: Select a sample with a status of No Analysis.

6206 Error dosing.

Cause: The degas system failed to dose the backfill gas to a pressure of 850 mmHg.

Action: The gas regulator may be set too low or turned off.

6207 Error calibrating the servo.

Cause: Calibration results are out of range.

Action: Follow standard calibration procedures and try again. Contact a Micromeritics service representative if this error message continues.

6210 Error waiting for pressure to drop.

Cause: There was a problem reading the file used for blank correction. The file is likely corrupt.

Action: Use a different file for blank correction.

6213 Error overheating on port [n]. Current = [n], Target = [n], Limit = [n].

Cause: A heating mantle and/or its thermocouple are not plugged into the correct port.

Action: Verify heating mantle connections. Contact a Micromeritics service representative if this error message continues.

6214 Continued overheating on port [n]. Current = [n], Target = [n], Limit = [n].

Cause: The temperature of the indicated mantle continued to rise after canceling.

Action: Ensure the power and thermocouple connectors for the mantle are properly installed. If they are, the mantle may be defective; contact your Micromeritics service representative.

6217 Error thermocouple unplugged on port [n]. Target = [n].

Cause: The thermocouple is not plugged into the correct degas port.

Action: Check the heating mantle connections for the specified degas port.

6218 Error: SmartVac is not in a valid state to check degas.

Cause: Check was selected to check degassing but the sample was not in an appropriate state. The degassing operation can only be checked after the vacuum setpoint has been attained or during a temperature ramp or hold.

Action: Wait until an appropriate time during the degassing operation and check the degassing operation again.

6219 The file name [n] has already been used.

Cause: A file name was entered that is already in use.

Action: Enter a unique file name.

6220 There are currently no available ports to start a degas operation.

Cause: All degas ports are in use.

Action: Wait until the degas operation is complete on a port, then another degas operation may be started.

6221 An evacuation cannot be started because all degas ports are currently in use.

Cause: All degas ports are in use.

Action: Wait until the degas operation is complete on a port, then an evacuation can be started on the port.

6222 At least one port must be selected before an evacuation can be started.

Cause: **Start** was selected on the Evacuate Degas window without first selecting a port.

Action: Select the port to evacuate, then select **Start**.

6223 There is no Nitrogen attached to the unit.

Cause: A calibration requiring nitrogen was attempted but the application does not recognize that nitrogen is attached.

Action: Ensure that a nitrogen gas cylinder is installed at one of the analysis ports, then go to **Unit > Unit configuration** and enter N2 for the appropriate valve.

6226 An analysis cannot be started because all ports are currently in use.

Cause: An attempt was made to start an analysis while all ports are in use.

Action: Wait until the analysis completes on a port, then another analysis can be started.

6227 File [n] cannot be analyzed. It is currently being edited.

Cause: An attempt was made to start an analysis using a sample file that is currently being edited.

Action: Close the edit session on the sample file, then the file can be used for analysis.

6228 Analysis gas [n] in sample file does not match analysis gas [n] in other active samples.

Cause: An attempt was made to start an analysis using a sample file that contains an analysis gas other than the gas currently being used. All current analyses must use the same analysis gas.

Action A: Change the gas in the sample file to use the current analysis gas.

Action B: Wait until the current analyses are complete, then run the sample.

6229 This file already selected for the analysis.

Cause: The selected sample file is already being used for an analysis.

Action: Select another sample file.

6230 Dosing method does not match analysis type. Choose Start Krypton Analysis from the Unit menu or change the dosing method to Normal.

Cause: There was an attempt to perform a nitrogen or nitrogen-like analysis with *From last port* selected as the dosing method.

Action: Change the *Dosing Method* to *Normal* in the *Adsorptive Properties* window, then start the analysis.

6231 Dosing method does not match analysis type. Choose Start Analysis from the Unit menu or change the dosing method to From last sample port.

Cause: An attempt was made to perform a Krypton analysis with *Normal* selected as the dosing method.

Action: Select *From last port* for *Dosing Method* in the *Adsorptive Properties* window, then start the analysis.

6232 [n] gas in sample file does not match [n] gas in other active samples.

Cause: An attempt was made to start an analysis using a sample file that contains a P_0 gas other than the P_0 gas currently being used. All current analyses must use the same P_0 gas.

Action A: Change the gas in the sample file to use the current P_0 gas.

Action B: Wait until the current analyses are complete, then run the sample.

6236 An evacuation cannot be started because all analysis ports are currently in use.

Cause: An attempt was made to evacuate one or more analysis ports while all ports are in use.

Action: Wait until the current operation completes to evacuate a port.

6240 Leak test failed on port [n].

Cause: With the sample port valve closed, the sample pressure increased by 0.15 mmHg before the leak test duration was completed.

Action: Check sample tube fitting and ensure that it is securely attached to the port, then restart the analysis.

6241 Maximum time limit exceeded before the port [n] elevator reached the UP position.

Cause A: The maximum time for the analysis was exceeded before the elevator reached the UP position. Ice may be present in the bottom or the neck of the Dewar.

Action A: Check the Dewar and remove ice if necessary, then restart the analysis.

Cause B: The Psat tube is interfering with elevator movement.

Action B: Ensure the Psat tube is close to the sample tube and the Dewar lid is over both the sample and Psat tubes, then restart the analysis.

6241 Maximum time limit exceeded before the port [n] elevator reached the DOWN position.

Cause: The maximum time for the analysis was exceeded before the elevator reached the UP position. Ice may be present in the bottom or the neck of the Dewar.

Action: Check the Dewar and remove ice if necessary, then restart the analysis.

6247 Warm Freespace failure: P1 = [n], P2 = [n].

6248 Cold Freespace failure: P3 = [n].

Cause A: Helium gas line is not properly connected to the analyzer.

Action A: Check the helium gas connections.

Cause B: A valve, transducer, or elevator has failed.

Action B: Contact your Micromeritics service representative if necessary.

6249 Zeroing of a transducer failed. Analysis canceled.

6250 Matching of Sample port transducer failed. Analysis canceled.

6251 Matching of Psat port transducer failed. Analysis canceled.

Cause: The transducer did not respond correctly.

Action: Contact your Micromeritics Service Representative.

6264 Krypton gas is not condensing in sample port [n].

Cause A: The krypton gas may be contaminated.

Action A1: Evacuate the krypton gas inlet line.

Action A2: Manually verify the saturation pressure of the krypton gas:

1. Evacuate the last port with an empty tube.
2. Backfill with krypton gas to 20 mmHg.
3. Raise the Dewar on the last port.

These steps should condense the krypton to a pressure below 3 mmHg.

Cause B: The Dewar on the last port does not contain enough cryogen.

Action B: Refill the Dewar.

6265 Error reading the degas servo DAC.

Cause: The servo valve target could not be set. All degas operations have been canceled.

Action: Contact your Micromeritics Service Representative.

6266 Warning: The compressibility factor table for [n] is empty. Start Analysis?

Cause: The fluid property information in the file selected for analysis does not have any compressibility factors.

Action: This is just a warning; the analysis will proceed. It is OK to cancel the analysis and update the fluid property information.

6267 Dose increments cannot be used with krypton analyses.

Cause: Dose increments are not supported for krypton analyses.

Action: Select *Target Pressures* and enter a pressure table in the analysis conditions.

6268 Dose increment [row number] [increment] is smaller than the minimum of [minimum increment]. Continue with the minimum increment?

Cause: A requested dose increment is too small to be dosed accurately.

Action 1: Click **Yes** to perform the analysis. The minimum increment will automatically be used in place of increments that are too small.

Action 2: Click **No**. Increase the sizes of the increments.

Action 3: Click **No**. Use more sample so that the requested increment per gram of sample amounts to an absolute increment that exceeds the minimum.

- 6510** Main pressure transducer overrange detected.
- 6511** Sample transducer [n] overrange detected.
- 6512** Po transducer [n] overrange detected.
- 6513** Hardware pressure overrange detected.
- Cause:* A manifold pressure over 1000 mmHg was detected by the hardware.
- Action:* Observe caution when operating the analyzer manually. Contact a Micromeritics service representative if this error message continues.
- 6516** Sample pressure greater than [n] is not allowed.
- Cause:* An absolute pressure greater than (pressure) mmHg was attained during low pressure dosing (either fixed dose mode or incremental dose mode).
- Action:* The analysis was canceled. All previously collected data were stored.
- 6517** Total volume dosed greater than [n] is not allowed.
- Cause A:* The maximum total volume dosed in an analysis was exceeded.
- Action A:* Perform leak checks on the system. Contact your Micromeritics Service Representative.
- Cause B:* The value for the P_0 may be too low, causing the analyzer to mistake condensation for actual adsorption.
- Action B:* Change the analysis variables to directly measure the value of P_0 during the experiment.
- Cause C:* The amount of sample used may be too large. Multiply the maximum value from the Volume Adsorbed column of the Isotherm Report by the sample weight. If the result exceeds (volume) cm^3 , the amount of sample is too large.
- Action C:* Reduce the amount of sample.
- 6518** Pressure of [n] exceeds the maximum manifold pressure of [n].
- Cause:* The maximum pressure in the analysis was exceeded.
- Action:* Contact your Micromeritics Service Representative.
- 6519** Psat gas is not condensing.
- Cause A:* The working Dewar does not contain enough bath liquid.
- Action A:* Retry the operation after filling the Dewar.

Cause B: The Psat gas is contaminated.

Action B: Replace the Psat gas supply.

Cause C: The Psat tubing from the regulator to the analyzer is contaminated.

Action C: Pump out the tubing.

6520 Power failure detected. The sample is in an unknown condition. A run termination will be performed for safety.

Cause: A total power failure occurred while an analysis was in progress.

Action: Allow the analysis to terminate.

6521 Time limit exceeded while dosing manifold to [n] with [n].

Cause A: The maximum time was exceeded before the target pressure point was reached. The nitrogen regulator may be set too low or turned off.

Action A: Set the analysis gas regulator to 15 psig (1.0 bar). Then resume the analysis.

Cause B: The analysis gas cylinder is empty.

Action B: Connect a new analysis gas cylinder, then resume the analysis.

6522 Time limit exceeded while evacuating manifold.

Cause A: Maximum manifold evacuation time was exceeded before the vacuum set point was achieved. Vacuum pump may be turned off.

Action A: Turn on vacuum pump switch, then restart the analysis.

Caution B: The vacuum pump oil level is low.

Action B: Check the vacuum pump oil level and add more oil if necessary, then restart the analysis.

Cause C: The manifold is contaminated or leaking.

Action C: Correct the problem. Refer to the analyzer Operator Manual on testing for leaks, then restart the analysis.

6523 Analysis canceled: Time limit exceeded while evacuating sample (unrestricted).

Cause: The maximum time for evacuating the sample through the unrestricted valve was exceeded. Possible causes are a leak in the sample tube fitting or a crack in the sample tube.

Action: Check the sample tube and the sample tube fitting; ensure that the tube is securely

attached to the port, then restart the analysis.

6524 Analysis canceled: Time limit exceeded while evacuating sample (servo).

Cause: The maximum time for evacuating the sample through the restricted valve was exceeded. Possible causes are a leak in the sample tube fitting, a crack in the sample tube, or a poorly degassed sample.

Action: Check the sample tube and the sample tube fitting; ensure that the tube is securely attached to the port. Verify that the sample is properly degassed; then resume the analysis.

6525 Time limit exceeded while backfilling manifold to [n] with [gas].

Cause A: The maximum time was exceeded before the target pressure point was reached. The backfill gas regulator may be set too low or turned off.

Action A: Set the backfill gas regulator to 15 psig (1.03 bar), then resume the analysis.

Cause B: The gas cylinder is empty.

Action B: Connect a new gas cylinder, then resume the analysis.

6266 Warning: The compressibility factor table for [n] is empty. Start Analysis?

Cause: The fluid property information in the file selected for analysis does not have any compressibility factors.

Action: This is just a warning; the analysis will proceed. It is OK to cancel the analysis and update the fluid property information.